

Brain tumors represent one of the most severe and life-threatening medical conditions, posing significant diagnostic and therapeutic challenges worldwide. This project seeks to address these challenges by developing a MATLAB-based tool that integrates various image processing methods to enhance, segment, and analyze brain MRI scans, ultimately aiding in more accurate and efficient tumor identification. Currently, the primary method for diagnosing brain tumors involves the analysis of Magnetic Resonance Imaging (MRI) scans by radiologists and neurologists. Moreover, with the increasing volume of medical imaging data in healthcare systems, there is a growing need for automated or computer-aided diagnostic (CAD) tools that can assist medical professionals in making faster, more consistent, and more reliable decisions.